

REMARKS

In the Final Office Action, the Examiner rejected claims 1-15, 18-33, 36-40, 42, 43, and 46-48 and objected to claims 1, 20, 38, 40, 41 and 46-48. Applicants have amended claims 1, 20, 38, 46, 47 and 48, and canceled claims 40 and 41. No new matter has been added by way of these amendments. Support for the amendments can be found in the specification as discussed below. Upon entry of these amendments, claims 1-15, 18-33, 36-39, 42, 43, and 46-48 will be pending in the present application. In view of the foregoing amendments and following remarks, all pending claims are believed to be in condition for allowance.

Claim Objections

In the Final Office Action, the Examiner objected to claims 1, 20, 38, and 46-48. Final Office Action, p. 2. Applicants have amended the claims as required by the Examiner, and respectfully request the objection be withdrawn. The Examiner also objected to dependent claims 40 and 41. *Id.* However, Applicants have canceled claims 40 and 41 making the rejection moot.

Rejections Under 35 U.S.C. § 102 and/or 35 U.S.C. § 103

In the Final Office Action, the Examiner made numerous rejections under 35 U.S.C. §§ 102 and 103, as detailed below. As the rejections under section 103 were made

in the alternative to rejections under section 102, they are discussed below in conjunction with the section 102 rejections.

The Examiner rejected claims 1-15, 18-33, 36, 37, 46 and 47 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over McDaniel et al., U.S. Patent No. 6,548,442 (hereinafter “the ‘442 patent”). In addition, the Examiner rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(e) as anticipated by the ‘442 patent. The Examiner rejected claims 1-15, 19-33, 37, 46 and 47 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Hawley et al., U.S. Patent No. 6,667,274 (hereinafter “Hawley”), and rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(e) as being anticipated by Hawley. Further, the Examiner rejected claim 48 under 35 U.S.C. § 102(b) as being anticipated by McDaniel et al., U.S. Patent No. 6,376,415 (hereinafter “the ‘415 patent”), and rejected claims 46 and 47 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over the ‘415 patent.

The Examiner rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(b) as being anticipated by Collins et al., U.S. Patent No. 6,524,987 (hereinafter “Collins”), and also rejected claims 1-15, 18-33, 36, 37, 46 and 47 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Collins. Finally, the Examiner rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(e) as

being anticipated by McDaniel et al., U.S. Patent No. 6,750,302 (hereinafter “the ‘302 patent”), and rejected claims 1-15, 19-33, 37, 46 and 47 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over the ‘302 patent. Applicants respectfully traverse these rejections.

Legal Precedent

Anticipation under 35 U.S.C. § 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). Every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Indeed, the prior art reference also must show the *identical* invention “*in as complete detail as contained in the ... claim*” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Furthermore, if the Examiner relies on a theory of inherency, the extrinsic evidence must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *In re Robertson*, 169 F.3d 743, 49 U.S.P.Q.2d 1949 (Fed. Cir. 1999) (emphasis added). In relying upon the legal theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the

allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art. *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The Examiner, in presenting the inherency argument, bears the evidentiary burden and must adequately satisfy this burden. *See id.*

Lastly, the burden of establishing a *prima facie* case of obviousness under 35 U.S.C. § 103 falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). To establish a *prima facie* case of obviousness, the Examiner must show that the combination includes *all* of the claimed elements, and also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). Further, the Supreme Court has recently stated that the obviousness analysis should be explicit. *See KSR Int'l Co. v. Teleflex, Inc.*, 82 U.S.P.Q.2d 1385 (U.S. 2007) (“[R]ejections based on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”) (quoting *In re Kahn*, 441 F.3d 977,988 (Fed. Cir. 2006)).

Deficiencies of the ‘442 Patent

As noted above, the Examiner rejected claims 1-15, 18-33, 36, 37, 46 and 47 under 35 U.S.C. § 102(e) as being anticipated by the ‘442 patent, or in the alternative,

under 35 U.S.C. § 103(a) as being obvious over the '442 patent. The Examiner also rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(e) as being anticipated by the '442 patent.

As amended, independent claims 1, 20, 38, and 46-48 recite, *inter alia*, "wherein the at least one chemically-treated solid oxide is substantially free of titanium, molybdenum, zirconium, chromium, and tungsten." (Emphasis added). Support for this amendment may be found in the specification at least at page 28, ll. 4-6. In stark contrast, the '442 patent requires the presence of zirconium in the solid oxide, stating that the "treated solid oxide compound comprises at least one halogen, zirconium, and a solid oxide compound." '442 patent, col. 10, ll. 48-49. Thus, the '442 patent cannot anticipate independent claims 1, 20, 38, and 46-48, or their dependent claims.

In the rejection, the Examiner admitted that the '442 patent is "deficient in characterizing the resulting polymer as recited in the instant claims." Final Office Action, p. 3. However, the Examiner alleged that since the "process of preparing polymer is substantially the same as that recited in the instant claims, a reasonable basis exists to believe that the resulting polymer exhibits substantially the same properties and characteristics." *Id.* Although Applicants do not agree with this allegation, as very small differences in catalysts and systems may make significant changes in polymer properties, the amendment discussed above has made this assertion moot. Moreover, Applicants strongly believe such features (polymer properties) are not necessarily present in the '442

patent. In sum, since the '442 patent does not disclose all of the elements of the present claims, the polymer formed clearly would not necessarily have the same inherent properties.

Furthermore, with regard to the obviousness rejection, the '442 patent should be removed from consideration in accordance with 35 U.S.C. § 103(c) and M.P.E.P. § 706.02(l), because the present application and the '442 patent were, at the time the invention was made, owned by, or subject to an obligation of assignment to Chevron Phillips Chemical Company. Accordingly, Applicants respectfully request that the Examiner remove the '442 patent from consideration. After the reference is removed, the rejections under 35 U.S.C. § 103(a) based on the '442 patent are moot.

For at least these reasons discussed above, Applicants respectfully request that the foregoing rejections under 35 U.S.C. §§ 102(e) and 103(a) based on the '442 patent be withdrawn and the claims allowed.

Deficiencies of Hawley

As noted above, the Examiner rejected claims 1-15, 19-33, 37, 46 and 47 under 35 U.S.C. § 102(e) as being anticipated by Hawley, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Hawley. The Examiner also rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(e) as being anticipated by Hawley. It should be noted that the Examiner asserted that Hawley teaches that the "solid oxide comprises at least one

halogen, zirconium, and a solid oxide (claim 1).” Final Office Action, p. 6. As Hawley does not contain this requirement, Applicants assume that the Examiner is mistakenly referring to the ‘442 patent in this assertion.

As amended, independent claims 1, 20, 38, and 46-48 recite, *inter alia*, “wherein the copolymer has a polydispersity index (Mw/Mn) greater than or equal to about 4.” This feature is supported by Table 6, which shows that all polymers produced by the inventive catalyst systems, indicated as RESIN A, B, C, D, E and F, have a polydispersity (Mw/Mn) of at least about 4.00. Specification, Table 6.

In the rejection, the Examiner admitted that Hawley is “deficient in characterizing the resulting polymer as recited in the instant claims.” Final Office Action, p. 5. However, as with the ‘442 patent, the Examiner alleged that since the “process of preparing polymer is substantially the same as that recited in the instant claims, a reasonable basis exists to believe that the resulting polymer exhibits substantially the same properties and characteristics.” *Id.* Respectfully, Applicants do not agree with either of these assertions. If the Examiner is asserting the principle of inherency, Applicants strongly believe that such properties are *not necessarily* present in Hawley. Plainly, the polymers prepared using the catalysts disclosed in Hawley, as shown in Table II, all have a polydispersity (Heterogeneity Index or HI) of less than about 3.3. Hawley, Table II. Although the polyolefins produced in Hawley are propylene based, one of ordinary skill in the art would recognize that ethylene based polyolefins would provide

even narrower polymers if run under the same conditions, i.e., have (lower HIs). Thus, Hawley cannot anticipate independent claims 1, 20, 38, and 46-48, or their dependent claims.

Further, with regard to the foregoing obviousness rejection, Applicants respectfully request that Hawley be removed from consideration in accordance with 35 U.S.C. § 103(c) and M.P.E.P. § 706.02(l), because the present application and the '442 patent were, at the time the invention was made, owned by, or subject to an obligation of assignment to Chevron Phillips Chemical Company. For this reason, Applicants respectfully assert that the Examiner's rejections under 35 U.S.C. § 103(a) based on Hawley are moot.

For at least these reasons, Applicants respectfully request that the foregoing rejections under 35 U.S.C. §§ 102(e) and 103(a) be withdrawn and the claims allowed.

Deficiencies of the '415 Patent

As noted above, the Examiner rejected claim 48 under 35 U.S.C. § 102(b) as being anticipated by the '415 Patent. The Examiner also rejected claims 46 and 47 under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over, the '415 Patent.

As amended, independent claims 46-48 recite, *inter alia*, “wherein the at least one chemically-treated solid oxide is substantially free of titanium, molybdenum, zirconium, chromium, and tungsten.” (Emphasis added). Support for this amendment may be found in the specification at least at page 28, ll. 4-6. Conversely, the ‘415 patent requires the solid oxide compound comprises a transition metal “selected from the group consisting of tungsten and molybdenum.” The ‘415 patent, col. 2, 1.63-col. 3, 1.2. Thus, the ‘415 patent cannot anticipate independent claims 46-48.

For at least the same reasons, the ‘415 patent does not make the present claims obvious. In the rejection, the Examiner admitted that the ‘415 patent is “deficient in characterizing the resulting polymer as recited in the instant claims.” Final Office Action, p. 7. However, the Examiner alleged that since the “process of preparing polymer is substantially the same as that recited in the instant claims, a reasonable basis exists to believe that the resulting polymer exhibits substantially the same properties and characteristics.” *Id.* Respectfully, Applicants do not agree with this allegation, as very small differences in catalysts and systems may make significant changes in polymer properties. Moreover, if the Examiner is relying on the theory of inherency, the Examiner has not satisfied his burden in showing that such features are *necessarily* present in the ‘415 patent. Plainly, the ‘415 patent does not disclose a catalyst without molybdenum or tungsten in the solid oxide, as in the current claims, as amended. Since the catalyst system in the ‘415 is not the same as in the current claims, the polymer formed would

clearly not have the same inherent properties, and the '415 patent cannot make the present claims obvious.

In view of the foregoing, Applicants respectfully request that the foregoing rejections under 35 U.S.C. §§ 102(e) and 103(a) of claims 46-48 be withdrawn and the claims allowed.

Deficiencies of Collins

As noted above, the Examiner rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(b) as being anticipated by Collins. Also, the Examiner rejected claims 1-15, 18-33, 36, 37, 46, and 47 under 35 U.S.C. § 102(b) as being anticipated by Collins, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Collins.

As amended, independent claims 1, 20, 38, and 46-48 recite, *inter alia*, “wherein the copolymer has a high load melt index/melt index (HLMI/MI) ratio greater than or equal to about 35.” This subject matter is supported by Table 6 in the present specification, which shows that all polymers produced by the inventive catalyst systems, indicated as RESIN A, B, C, D, E and F, have an HLMI/MI ratio of at least about 37. Specification, Table 6. In contrast, none of the polymers prepared using the catalysts disclosed in Collins has a HLMI/MI ratio greater than about 25.5. *See, e.g.*, Collins, col. 16, l. 64; col. 17, ll. 24, 30; col. 18, l. 54; col. 19, l. 55. Thus, Collins cannot anticipate claims 1, 20, 38, and 46-48, or their dependent claims.

Further, in the rejection, the Examiner admitted that Collins is “deficient in characterizing the resulting polymer as recited in the instant claims.” Final Office Action, p. 9. However, the Examiner alleged that since the “process of preparing polymer is substantially the same as that recited in the instant claims, a reasonable basis exists to believe that the resulting polymer exhibits substantially the same properties and characteristics.” *Id.* Respectfully, Applicants do not agree with either of these assertions. The polymers prepared using the catalysts disclosed in Collins were characterized, and all have a HLMI/MI ratio greater than about 25.5. *See, e.g.*, Collins, col. 16, l. 64; col. 17, ll. 24, 30; col. 18, l. 54; col. 19, l. 55. Thus, Collins does not disclose all of the elements of the present independent claims 1, 20, 46 and 47. Further, the difference in properties between the properties of polymers made with the catalysts of the present claims and polymers using the catalysts of Collins indicates that the catalysts of the present claims are not obvious over Collins.

For these reasons, Applicants respectfully request that the foregoing rejections under 35 U.S.C. §§ 102(b) and 103(a) based on Collins be withdrawn and the claims allowed.

Deficiencies of the ‘302 Patent

As noted above, the Examiner rejected claims 38-40, 42, 43 and 48 under 35 U.S.C. § 102(e) as being anticipated by the ‘302 patent. Further, the Examiner rejected

claims 1-15, 19-33, 37, 46 and 47 under 35 U.S.C. § 102(e) as being anticipated by the '302 patent, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over the '302 patent. Based on the dates of the references, Applicants assumed that the Examiner intended for the rejections under § 102 to be based on § 102(e).

As amended, independent claims 1, 20, 38, and 46-48 recite, *inter alia*, "wherein the at least one chemically-treated solid oxide is substantially free of titanium, molybdenum, zirconium, chromium, and tungsten." (Emphasis added). Support for this amendment may be found in the specification at least at page 28, ll. 4-6. Quite the opposite, the '302 patent requires the presence of chromium in the solid oxide, stating that the "treated solid oxide compound comprises fluorine, chromium, and a solid oxide compound." '302 patent, col. 2, ll. 66-67. Thus, the '302 patent does not disclose all of the elements of independent claims 38 and 48, and cannot anticipate these claims. For at least the same reasons, the '302 patent cannot anticipate claims 39-40, 42 and 43, which depend from claim 38. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 102(e) be withdrawn and the claims allowed to issue.

Further, Applicants respectfully request that the '302 patent be removed from consideration as a reference under 35 U.S.C. § 103(a) in accordance with 35 U.S.C. § 103(c) and M.P.E.P. § 706.02(I), because the present application and the '302 patent were, at the time the invention was made, owned by, or subject to an obligation of

assignment to Chevron Phillips Chemical Company. For this reason, Applicants respectfully assert that the Examiner's rejections under 35 U.S.C. § 103(a) based on the '302 patent are moot.

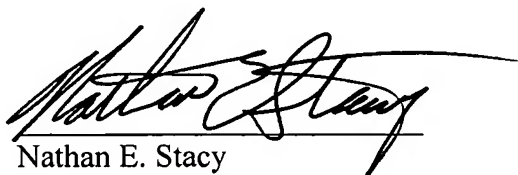
For at least the reasons discussed above, Applicants respectfully request that the rejections under 35 U.S.C. §§ 102(e) and 103(a) based on the '302 patent be withdrawn and the claims allowed.

Conclusion

In view of the remarks set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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